This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (currently amended) [[A]] In a controller of a vacuum pump having a pump mechanism section that performs evacuation to set a space to be evacuated to a predetermined degree of vacuum, [[and]] the improvement comprising an electric motor section for driving said pump mechanism section,

wherein, when an increase in load torque of said vacuum pump per unit time abruptly changes upward, deceleration control to decrease a rotational speed of said electric motor section is carried out.

Claim 2 (original) The controller according to claim 1, wherein said load torque of said vacuum pump is calculated based on a value of a current supplied to said electric motor section.

Claim 3 (original) The controller according to claim 1, wherein said increase in load torque of said vacuum pump per unit time is monitored repeatedly at a predetermined time interval and that monitoring is continued even after it is determined that said increase in load torque of said vacuum pump per unit time has increased abruptly.

Claim 4 (original) The controller according to claim 1, wherein, when said increase in load torque of said vacuum pump per unit time is greater than a predetermined value, it is determined that said increase in load torque of said vacuum pump per unit time has abruptly changed upward and said deceleration control is carried out.

Claim 5 (original) The controller according to claim 1, wherein, when a rate of change in said increase in load torque of said vacuum pump per unit time is greater than a predetermined value, it is determined that said increase in load torque of said vacuum pump per unit time has abruptly changed upward and said deceleration control is carried out.

Claim 6 (original) The controller according to claim 4, wherein said deceleration control is carried out to reduce said increase in load torque of said vacuum pump per unit time to a predetermined target value.

Claim 7 (original) The controller according to claim 5, wherein said deceleration control is carried out to reduce a rate of change in said increase in load torque of said vacuum pump per unit time to a predetermined target value.

Claim 8 (original) The controller according to claim 1, wherein said electric motor section is controlled in such a way that said load torque of said vacuum pump does not exceed a predetermined upper limit.

Claim 9 (currently amended) The controller according to claim 1, wherein said electric motor section ~~is constructed by~~ includes a synchronous motor type or inductive motor type brushless motor.

Claim 10 (original) The controller according to claim 1, wherein a load-lock chamber provided side-by-side with respect to a process chamber in a semiconductor production apparatus is said space to be exhausted by said vacuum pump.

Claim 11 (original) The controller according to claim 1, wherein said increase in load torque of said vacuum pump per unit time is monitored repeatedly at a predetermined time interval, and that monitoring is stopped after it is determined that said increase in load torque of said vacuum pump per unit time has abruptly changed upward.

Claim 12 (original) The controller according to claim 11, wherein a number of times said deceleration control is repeated is restricted.

Claim 13 (canceled)

Claim 14 (new) A method for controlling evacuation of a space to predetermined degree of vacuum, the method comprising:

using an electric motor to drive a pump mechanism to evacuate the space;

monitoring the load torque of said vacuum pump per unit time; and

when the load torque abruptly changes upward, performing deceleration control to reduce the rotational speed of said electric motor.

Claim 15 (new) A controller of controlling evacuation a space to a predetermined degree of vacuum, the controller comprising:

a pump mechanism section that performs evacuation and an electric motor section for driving said pump mechanism section,

wherein, when an increase in load torque of said vacuum pump per unit time abruptly changes upward, deceleration control to decrease a rotational speed of said electric motor section is carried out.

Claim 16 (new) The controller according to claim 15, wherein said load torque of said vacuum pump is calculated based on a value of a current supplied to said electric motor section.

Claim 17 (new) The controller according to claim 15, wherein said increase in load torque of said vacuum pump per unit time is monitored repeatedly at a predetermined time interval and that monitoring is continued even after it is determined that said increase in load torque of said vacuum pump per unit time has increased abruptly.

Claim 18 (new) The controller according to claim 15, wherein, when said increase in load torque of said vacuum pump per unit time is greater than a predetermined value, it is determined that said increase in load torque of said vacuum pump per unit time has abruptly changed upward and said deceleration control is carried out.

Claim 19 (new) The controller according to claim 15, wherein, when a rate of change in said increase in load torque of said vacuum pump per unit time is greater than a

predetermined value, it is determined that said increase in load torque of said vacuum pump per unit time has abruptly changed upward and said deceleration control is carried out.

Claim 20 (new) The controller according to claim 18, wherein said deceleration control is carried out to reduce said increase in load torque of said vacuum pump per unit time to a predetermined target value.

Claim 21 (new) The controller according to claim 19, wherein said deceleration control is carried out to reduce a rate of change in said increase in load torque of said vacuum pump per unit time to a predetermined target value.